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CORRESPONDENCE

Lectins agglutination test as an epidemiological marker for *Neisseria gonorrhoeae*

Plant lectin-binding has been used to study the cell surface carbohydrate composition of bacteria and has revealed inter- and intra-strain variation.[1 2] The technique has been specifically applied to strains of *Neisseria gonorrhoeae* with up to 14 different lectins.[3 4]

Serotyping and auxotyping of *Neisseria gonorrhoeae* are not efficient means of discriminating between strains. Many strains exhibit the same pattern.[5] We applied the technique of lectin agglutination, using ten lectins to study 140 previously characterised strains of *N. gonorrhoeae* (Table 1). Twenty-two different patterns were shown but the groups 1, 2, 3, 4, 5, 6 and 7 were predominant. Seventy-nine per cent of the strains were represented in these groups. In this relatively small sample of strains, no statistically significant difference could be shown in the distribution of strains between serogroups 1A and 1B. However, when serotyping (1A and 1B) and auxotyping (prototrophs and prolina-dependent) are taken into account, the addition of lectin binding pattern markedly increases the number of potential discriminating groups (table 2). This method of typing was found to be reproducible and should be useful for epidemiologic studies.

Table 2 Distribution of strains into the different epidemiological markers

Serotype, Auxotype	*Number of strains*	*Number of agglutination groups*
IA, Prototrophs	13	7
IA, -Proline	18	9
IA, -Arginine	4	3
IA, -Metionine	1	1
IA, -Leucine	1	1
IA, -Proline -Arginine	2	2
IB, Prototrophs	69	16
IB, -Proline	14	6
IB, -Arginine	2	2
IB, -Metionine	1	1
IB, -Hypoxantine	4	4
IB, -Histidine	3	3
IB, -Lysine	2	2
IB, -Proline, -Arginine	5	5
IB, -Proline -Hypoxantine	1	1

It is important to note that 4·9% of strains did not agglutinate with *Triticum vulgaris* (WGA), as previously reported.[6] Use of this marker is therefore not an exclusive identification feature for *N. gonorrhoeae*.[2 7]

J A VÁZQUEZ
S BERRÓN
Servicio de Bacteriologia Centro Nacional de Microbiologia, Virologia e Inmunologia Sanitarias. Instituto Carlos III. Majadahonda (Madrid), Spain

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Table 1 Agglutination patterns with lectins in 140 gonococcal strains

	ConA	*WGA*	*SBA*	*PNA*	*UEA*	*STA*	*PHA-LDBA*	*LcH*	*PSA*
1 (26·4)*	+	+	+	+	−	+	−	−	−	−
2 (16·7)	−	+	+	+	−	+	−	−	−	−
3 (11·1)	+	+	+	+	−	+	−	−	−	+
4 (10·4)	−	+	+	+	−	+	−	+	−	−
5 (6·9)	+	+	+	+	−	+	−	+	−	−
6 (4·2)	−	+	+	−	−	+	−	−	−	−
7 (4·2)	+	+	+	+	−	+	−	+	−	+
8 (2·7)	+	+	+	+	−	+	−	−	+	−
9 (2·7)	−	+	−	+	−	+	−	−	−	−
10 (2·1)	+	+	−	−	−	+	−	−	−	−
11 (2·1)	+	−	−	+	−	+	−	−	−	−
12 (1·4)	+	−	+	+	−	−	−	−	−	+
13 (1·4)	−	+	+	+	+	+	−	+	−	−
14 (1·4)	+	+	+	−	−	+	−	−	−	−
15 (1·4)	+	+	+	−	−	+	−	−	−	+
16 (0·7)	−	+	+	+	−	+	+	+	−	−
17 (0·7)	−	+	+	+	−	+	−	−	−	+
18 (0·7)	+	−	−	+	−	−	−	−	−	−
19 (0·7)	−	+	−	+	−	−	−	−	−	−
20 (0·7)	−	−	+	−	−	+	−	−	−	−
21 (0·7)	+	+	−	+	−	+	−	−	−	−
22 (0·7)	+	+	−	+	−	+	−	+	−	−

* % of strains.
Abbreviations: ConA (Concavalina A), WGA (*Triticum vulgaris*), SBA (*Glycine max*), PNA (*Arachis hipogaea*), UEA (*Ulex europaeus*), STA (*Solanium tuberosum*), PHA-L (*Phaseolus vulgaris*), DBA (*Dolichos bifloris*), LcH (*Lens culinaris*), PSA (*Pisum sativum*).

Trends in gonococcal infection: no room for complacency

Neisseria gonorrhoeae isolation rates can be used as markers of changes in sexual behaviour. *N gonorrhoeae* usually requires unprotected penetrative sexual intercourse for transmission, has a short incubation period and is easy to diagnose.

It has been previously noted by this unit that the *N gonorrhoeae* isolation rate had declined[1] and this decline has persisted (table). In 1983, 7% of patients presenting with a new complaint had gonorrhoea. This figure had declined to 2% in 1989 ($R = -0.93$, $p < 0.01$).

Of those presenting with gonorrhoea, the proportion of heterosexual men has increased significantly from

Table Number of new patients and gonococcal isolates between 1983 and 1989

Groups	*1983*	*1984*	*1985*	*1986*	*1987*	*1988*	*1989*
Total new patients	38,106	37,579	38,971	39,853	37,970	31,470	21,487
Gonococcal isolates	2,688	2,349	1,769	1,327	766	600	521

44% in 1983 to 53% in 1989 ($R = 0{\cdot}90$, $p < 0{\cdot}01$). The proportion of heterosexual females has remained relatively constant at 31% ($R = 0{\cdot}66$, $p < 0{\cdot}2$), whilst the proportion who are homosexual males has declined from 27% in 1983 to 16% in 1989 ($R = -0{\cdot}85$, $p < 0{\cdot}02$; fig). This decline has been observed in other London[2] and New York[3] clinic populations.

Although the declining rates are encouraging, no room for complacency exists. Of the 83 homosexual men with gonorrhoea diagnosed in 1989, 69% were diagnosed in the second half of the year. Of these 83 men, 62 (75%) reported having had recent unprotected anal intercourse.

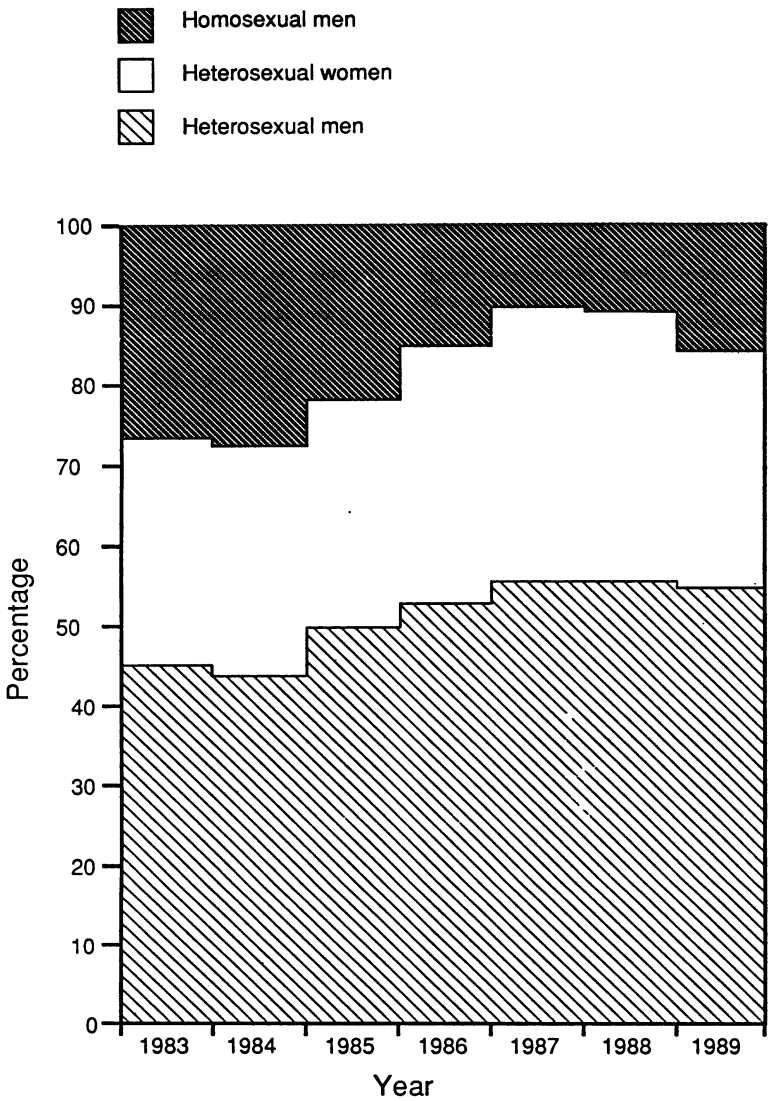

Figure Percentage of individuals with positive gonococcal isolates between 1983 and 1989 by gender and sexual orientation.

Nine (11%) had used condoms which broke during anal intercourse, whilst 12 (14%) reported unprotected oral intercourse as their only risk of gonorrhoea. Twenty two patients had previous HIV1 antibody tests of which six were positive (27% of those tested). Five of these six patients reported recent unprotected anal intercourse while the sixth used a condom which broke during anal intercourse. Two patients had positive HIV1 antibody tests taken after the diagnosis of gonorrhoea was made. Similarly 10 (12%) of these patients had positive syphilis serology, of whom two reported never having been treated for syphilis. Finally, 63 of the 83 had been investigated for hepatitis B: 32% had evidence of previous infection and two were chronic carriers of hepatitis B surface antigen.

These figures suggest that groups of heterosexual and homosexual men continue to have unprotected sexual intercourse with casual contacts. Though changes have been observed in both groups these trends suggest that there is a continuing need for health education.

PATRICK FRENCH
JENNY DAVIS
DAVID GOLDMEIER
Department of Genito-Urinary Medicine, Jefferiss Wing, St Mary's Hospital, Praed Street, London W2 1NY, UK
EDDIE BECK
Academic Department of Public Health, St Mary's Hospital Medical School, Praed Street, London W2 1NY, UK

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Isolate of TET M-containing *Neisseria gonorrhoeae* (TRNG) in Spain

In February 1985 *Neisseria gonorrhoeae* with resistance to tetracycline (TRNG) encoded on a 25·2